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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,874	09/30/2003	Howard Bernstein	17976-0006	6790

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EXAMINER	
GEORGE, KONATA M	

ART UNIT	PAPER NUMBER
1616	

MAIL DATE	DELIVERY MODE
06/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/675,874	BERNSTEIN ET AL.	
	Examiner	Art Unit	
	KONATA M. GEORGE	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/23/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-12 and 14-56 are pending in this application.

Request for Continued Examination (RCE)

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 23, 2008 has been entered.

Action Summary

Any rejections of record that are not repeated below are considered withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-12 and 14-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeLuca et al. (US 4,818,542) in view of Staub et al. (US 6,395,300).

Applicants claim a sustained release formulation comprising porous microparticles, which comprise a pharmaceutical agent and a hydrophobic matrix,

wherein the microparticles have a geometric size of 0.1 to 5 microns and an average porosity of between 15% and 90% by volume.

Determination of the scope and content of the prior art
(MPEP §2141.01)

DeLuca et al. teach porous microspheres for the controlled delivery of drugs or other matrix confined materials (col. 2, lines 51-54). Column 3, line 65 through column 4, line 36 teach that the porous microspheres are derived from copolymeric and homopolymeric polyesters such as, polyglycolic acid, polylactic acid, and copolymers of glycolide and L-lactide. Column 5, line 65 through column 6, line 1 teach that the microspheres can have a particle size of from between about 1 to 150 microns, but preferably between about 0.5 to 50 microns. Column 6, lines 2-31 teach that the agents are incorporated into the pores of the microparticles and that "agent" refers to and diagnostic or pharmacologically active agent, which would be generally suited for introduction into a human. Column 6, line 39 teaches that excipients or adjuvants can be incorporated in the formulation and line 60 teaches that proteins, surfactants can added to the delivery system. Column 6, lines 48-52 teach that the composition is suitable for inhalation and by administering through the mucous membrane of the nose, throat or bronchiopulmonary tissue. Column 6, lines 58-62 teach that additional active agents can be incorporated in the drug delivery system.

***Ascertainment of the difference between the prior art and the claims* (MPEP §2141.02)**

DeLuca et al. do not teach the agent being released from the microparticles in the lungs for at least 2 hours as claimed or the average porosity volume of 5% to 90% by volume, the increase of MAT_{inh} after inhalation. DeLuca et al. do not teach the formulation comprising a bulking agent and the specific pharmaceutical agents or surfactant. It is for this that Straub et al. is joined.

Straub et al. teach a porous drug matrix additionally comprising water-soluble polymers or sugars, wetting agents such as surfactants, etc. and the matrix having a diameter size of about 100 nm to 5 microns (col. 3, lines 46-61). Column 4, line 11 through column 8, line 9 list the types of drugs that can be employed in the drug matrix. Column 8, lines 34-67 teach examples of the polymers and sugars that can be used in the matrix such as poylvinylpyrrolidone (line 41), xylitol (line 59) and lactose (line 63).

Finding of prima facie obviousness
***Rational and Motivation* (MPEP §2142-2143)**

Although the prior art reference of DeLuca et al. do not teach the agent being released from the microparticles in the lungs for at least 2 hours as claimed by applicant, it is the position of the examiner that this limitation would be met as DeLuca et al. teach the claimed invention. This limitation is considered functional language, therefore, if the composition of the prior art teach the composition of the instant invention, the function of the composition will also be the same. Furthermore, the composition as claimed is directed toward porous microparticles comprising a

pharmaceutical agent and a matrix material. Since there is no additional information in the specification with regards to the release profile (i.e. coating or physical makeup which makes it a sustained release or the increase of MAT_{inh} after inhalation), any porous microparticle having the claimed drug and matrix material would have the release profile as claimed. The determination of the average porosity volume would have been obvious to one of ordinary skill in the art. One of ordinary skill in the art when formulating a porous particle for the sustained release of a drug would have determined that the amount of pores on the particles would have an effect on the delivery of the drug; the more pores the greater the delivery of the drug over a period of time; the less amount of pores, the less delivery of the drug over the same period of time. With respect to the specific pharmaceutical agents and surfactant, DeLuca broadly discloses the use of diagnostic or pharmacologically active agents and surfactants, therefore, any and all diagnostic or pharmacologically active agents or surfactnats can be employed in the particles without limitation.

Straub et al. is relied upon to teach that excipients such as bulking agents can be added to the composition of DeLuca et al. (col. 8, lines 10-12 and 59-63). Therefore, when looking for examples of excipients that can be used in porous microparticles, one of ordinary skill in the art is taught to look to Straub et al. which teach a porous microparticle composition.

Response to Arguments

Applicant's arguments filed April 23, 2008 have been fully considered but they are not persuasive.

Applicant argues that DeLuca et al. do not teach that the pharmaceutical agent is dispersed and encapsulated within the hydrophobic matrix material. The examiner disagrees. In review of DeLuca et al. and Straub, it is the position of the examiner that the amendment is taught. As mentioned above, DeLuca incorporates the agent into the pores of the particle. It is therefore understood by the examiner that this is a form of encapsulation. The dispersion limitation is supported by the fact that the pores are contained throughout the particle, not limited to the surface of the particle.

Conclusion

Claims 1-12 and 14-56 are rejected.

Telephone Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Konata M. George, whose telephone number is 571-272-0613. The examiner can normally be reached from 8:00AM to 6:30PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter, can be reached at 571-272-0646. The fax phone

numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have question on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Konata M. George/
Primary Examiner, Art Unit 1616